

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended and written in outline form without indications of correction over prior versions. See below for form with corrections shown)

1. A glycopeptide of the formula A₁-A₂-A₃-A₄-A₅-A₆-A₇, [SEQ ID NO:1] in which each dash represents a covalent bond;

wherein the group A₁ comprises an α-amino acid residue, alkyl, aryl, aralkyl, alkanoyl, aroyl, aralkanoyl, heterocyclic, heterocyclic-carbonyl, heterocyclic-alkyl, heterocyclic-alkyl-carbonyl, alkylsulfonyl, arylsulfonyl, guanidinyl, carbamoyl, or xanthyl;

where each of the groups A₂ to A₇ comprises an α-amino acid residue, whereby (i) the group A₁ is linked to an amino group on the group A₂, (ii) each of the groups A₂, A₄ and A₆ bears an aromatic side chain, which aromatic side chains are cross-linked together by two or more covalent bonds, and (iii) the group A₇ bears a terminal carboxyl, ester, amide, or N-substituted amide group;

and wherein the group A₄ is linked via a glycosidic bond to a disaccharide having a glucose residue directly attached to said A₄ residue, wherein said glucose residue bears an N-substituted aminohexose residue and at least one substituent of the formula YXR, N⁺(R₁)=CR₂R₃, N=PR₁R₂R₃, N⁺R₁R₂R₃ or P⁺R₁R₂R₃, wherein the group Y is a single bond, O, NR₁ or S; the group X is O, NR₁, S, SO₂, C(O)O, C(O)S, C(S)O, C(S)S, C(NR₁)O, C(O)NR₁, or halo (in which case Y and R are absent); and R, R₁, R₂, and R₃ are independently hydrogen, alkyl, aryl, aralkyl, alkanoyl, aroyl, aralkanoyl, heterocyclic, heterocyclic-carbonyl, heterocyclic-alkyl, heterocyclic-alkyl-carbonyl, alkylsulfonyl or arylsulfonyl; and any pharmaceutically acceptable salts thereof; provided that at least one of the substituents of the formula YXR is not hydroxyl; X and Y are not both O; X and Y are not S and O, or O and S, respectively; and if two or more of said substituents are present, they can be the same or different.

1. (Currently Amended showing corrections from prior form) A glycopeptide of the formula A₁-A₂-A₃-A₄-A₅-A₆-A₇, [SEQ ID NO:1] in which each dash represents a covalent bond; wherein the group A₁ comprises ~~a modified or unmodified~~ an α-amino acid

residue, alkyl, aryl, aralkyl, alkanoyl, aroyl, aralkanoyl, heterocyclic, heterocyclic-carbonyl, heterocyclic-alkyl, heterocyclic-alkyl-carbonyl, alkylsulfonyl, arylsulfonyl, guanidinyl, carbamoyl, or xanthyl; where each of the groups A₂ to A₇ comprises a ~~modified or unmodified~~ an alpha α-amino acid residue, whereby (i) the group A₁ is linked to an amino group on the group A₂, (ii) each of the groups A₂, A₄ and A₆ bears an aromatic side chain, which aromatic side chains are cross-linked together by two or more covalent bonds, and (iii) the group A₇ bears a terminal carboxyl, ester, amide, or N-substituted amide group;

and wherein ~~one or more of the groups A₁ to A₇~~ the group A₄ is linked via a glycosidic bond to

~~one or more glycosidic groups each having one or more sugar residues; wherein at least one of said sugar residues is a disaccharide modified to bear one or more substituents of the formula YXR, N⁺(R₁)=CR₂R₃, N=PR₁R₂R₃, N⁺R₁R₂R₃ or P⁺R₁R₂R₃ in which the group Y is a single bond, O, NR₁ or S; the group X is O, NR₁, S, SO₂, C(O)O, C(O)S, C(S)O, C(S)S, C(NR₁)O, C(O)NR₁, or halo (in which case Y and R are absent); and R, R₁, R₂, and R₃ are independently hydrogen, alkyl, aryl, aralkyl, alkanoyl, aroyl, aralkanoyl, heterocyclic, heterocyclic-carbonyl, heterocyclic-alkyl, heterocyclic-alkyl-carbonyl, alkylsulfonyl or arylsulfonyl; and any pharmaceutically acceptable salts thereof; provided that at least one of the substituents of the formula YXR is not hydroxyl; X and Y are not both O; X and Y are not S and O, or O and S, respectively; and if two or more of said substituents are present, they can be the same or different; and~~

~~provided that when A₄ is linked to a disaccharide having a glucose residue directly attached to said A₄ residue, wherein said glucose residue that bears an N-substituted aminohexose residue, then said glucose residue is modified to bear and at least one of said substituents substituent of the formula YXR, N⁺(R₁)=CR₂R₃, N=PR₁R₂R₃, N⁺R₁R₂R₃ or P⁺R₁R₂R₃, wherein the group Y is a single bond, O, NR₁ or S; the group X is O, NR₁, S, SO₂, C(O)O, C(O)S, C(S)O, C(S)S, C(NR₁)O, C(O)NR₁, or halo (in which case Y and R are absent); and R, R₁, R₂, and R₃ are independently hydrogen, alkyl, aryl, aralkyl, alkanoyl, aroyl, aralkanoyl, heterocyclic, heterocyclic-carbonyl, heterocyclic-alkyl, heterocyclic-alkyl-carbonyl, alkylsulfonyl or arylsulfonyl; and any pharmaceutically acceptable salts thereof; provided that at least one of the substituents of the formula YXR is not hydroxyl; X and Y are~~

not both O; X and Y are not S and O, or O and S, respectively; and if two or more of said substituents are present, they can be the same or different.

2. (Cancelled)
3. (Currently Amended) The glycopeptide of claim 2 1 ~~in which wherein at least one of~~ said substituents is attached to the C6 position of said hexose glucose residue linked directly to A₄.
4. (Cancelled)
5. (Currently Amended) The glycopeptide of claim 4 3 in which at least one of said substituents is YXR wherein Y is a single bond and X is O, NR₁, S or SO₂.
6. (Original) The glycopeptide of claim 5 wherein X is NR₁.
7. (Original) The glycopeptide of claim 5 wherein X is S.
8. (Original) The glycopeptide of claim 5 wherein X is SO₂.
9. (Original) The glycopeptide of claim 5 wherein X is O and R is not H.
10. (Currently Amended) The glycopeptide of claim 4 3 wherein at least one of said substituents YXR is halogen.
11. (Currently Amended) The glycopeptide of claim 2 1 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
12. (Original) The glycopeptide of claim 3 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
13. (Cancelled)
14. (Original) The glycopeptide of claim 5 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
15. (Original) The glycopeptide of claim 6 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
16. (Original) The glycopeptide of claim 7 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
17. (Original) The glycopeptide of claim 8 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
18. (Original) The glycopeptide of claim 9 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.

19. (Original) The glycopeptide of claim 10 wherein A₁-A₂-A₃-A₄-A₅-A₆-A₇, SEQ ID NO:1, form a dalbaheptide.
20. (Original) The glycopeptide of claim 11, wherein A₆ in said dalbaheptide is linked via a glycosidic bond to one or more sugar residues.
21. (Original) The glycopeptide of claim 11 wherein the amino acids in said dalbaheptide are those in vancomycin.
22. (Original) The glycopeptide of claim 20 wherein A₁, which is N-methyl leucine, has been selectively removed and replaced with another of said groups A₁.
23. (Currently Amended) The glycopeptide of claim 2 1 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
24. (Currently Amended) The glycopeptide of claim 3 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
25. (Cancelled)
26. (Currently Amended) The glycopeptide of claim 5 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
27. (Currently Amended) The glycopeptide of claim 6 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
28. (Currently Amended) The glycopeptide of claim 7 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
29. (Currently Amended) The glycopeptide of claim 8 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
30. (Currently Amended) The glycopeptide of claim 9 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
31. (Currently Amended) The glycopeptide of claim 10 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
32. (Currently Amended) The glycopeptide of claim 11 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
33. (Currently Amended) The glycopeptide of claim 12 in which the ~~ether hexose N-substituted aminohexose~~ residue bears at least one of said substituents.
34. (Cancelled)

35. (Currently Amended) The glycopeptide of claims 14 in which the ~~ether hexose~~ N-substituted aminohexose residue bears at least one of said substituents.

36. (Original) The glycopeptide of claim 23 wherein at least one of said substituents is YXR wherein Y is a single bond and X is O, NR₁, S or SO₂.

37. (Original) The glycopeptide of claim 36 wherein X is NR₁.

38. (Currently Amended) The glycopeptide of claim 37 wherein said substituent is attached to C3 of said ~~ether hexose~~ N-substituted aminohexose residue.

Claims 39-41 (Withdrawn)

Claims 42-49 (Cancelled)

Claims 50-57 (Withdrawn)

Claims 58-73 (Cancelled)

Claims 74-82 (Withdrawn)

Claims 83-101 (Cancelled)

102. (Currently Amended) A glycopeptide antibiotic bearing at least one disaccharide group, said disaccharide group comprising two saccharide groups, a first of said saccharide groups bearing at least one amino or substituted amino group, and a second of said saccharide groups linked directly to said glycopeptide is modified to bear at least one substituent of the formula YXR, N⁺(R₁)=CR₂R₃, N=PR₁R₂R₃, N⁺R₁R₂R₃ or P⁺R₁R₂R₃, in which the group Y is a single bond, O, NR₁ or S; the group X is O, NR₁, S, SO₂, C(O)O, C(O)S, C(S)O, C(S)S, C(NR₁)O, C(O)NR₁, or halo (in which case Y and R are absent); and R, R₁, R₂, and R₃ are independently hydrogen, alkyl, aryl, aralkyl, alkanoyl, aroyl, aralkanoyl, heterocyclic, heterocyclic-carbonyl, heterocyclic-alkyl, heterocyclic-alkyl-carbonyl, alkylsulfonyl or arylsulfonyl, provided that the substituents of the formula YXR is not hydroxyl; X and Y are not both O; X and Y are not S and O, or O and S, respectively; and if two or more of said substituents are present, they can be the same or different which is not hydroxyl, or a pharmaceutically acceptable salt thereof.

103. (Original) The glycopeptide antibiotic of claim 102 wherein the second of said saccharide groups is glucose modified to bear at least one substituent which is not hydroxyl at the C6 position of said glucose.

104. (Original) The glycopeptide antibiotic of claim 103 which is vancomycin modified to bear at least one substituent which is not hydroxyl at the C6 position of said glucose.

105. (Original) The glycopeptide antibiotic of claim 104 wherein said at least one substituent which is not hydroxyl at the C6 position of said glucose is amino.

106. (Original) The glycopeptide antibiotic of claim 105 wherein the first of said saccharide groups bears at least one substituted amino group.

107. (Original) The glycopeptide antibiotic of claim 106 wherein said substituted amino group is NR₁H wherein R₁ bears one or more alkyl, substituted alkyl, aryl, substituted aryl, heterocyclic or substituted heterocyclic groups.

108. (Original) The glycopeptide antibiotic of claim 107 wherein at least one of said substituted alkyl groups is aralkyl.

109. (Original) The glycopeptide antibiotic of claim 107 wherein at least one of said substituted aryl groups is aralkyloxy substituted aryl.

110. (Original) The glycopeptide antibiotic of claim 107 wherein at least one of said substituted aryl groups is halo substituted aryl.

111. (Original) The glycopeptide antibiotic of claim 102 wherein the first of said saccharide groups bears at least one substituted amino group.

112. (Original) The glycopeptide antibiotic of claim 111 wherein said substituted amino group is NR₁H wherein R₁ bears one or more alkyl, substituted alkyl, aryl, substituted aryl, heterocyclic or substituted heterocyclic groups.

113. (Original) The glycopeptide antibiotic of claim 112 wherein at least one of said substituted alkyl groups is aralkyl.

114. (Original) The glycopeptide antibiotic of claim 112 wherein at least one of said substituted aryl groups is aralkyloxy substituted aryl.

115. (Original) The glycopeptide antibiotic of claim 112 wherein at least one of said substituted aryl groups is halo substituted aryl.

116. (Original) The glycopeptide antibiotic of claim 112 wherein said at least one substituent which is not hydroxyl is amino.